

WHAT IS CLAIMED IS:

1. A user interface for an image acquisition device, comprising:

5 a preview area for displaying a preview image; and  
a control area for displaying a property sheet,

10 wherein said property sheet comprises a plurality of property pages, each of the plurality of property pages having an interface for image acquisition device control, at least one property page having an interface for core image acquisition device control and at least one property page having an interface for device-dependent image acquisition device control, and

15 wherein manipulation of the image acquisition device control is reflected in the preview image.

20 2. A user interface according to Claim 1, wherein said plurality of property pages includes a main property page, a tone property page, and a preferences property page; and wherein the main property page, the tone property page, and the  
25 preferences property page each provides at least one interface for core image acquisition device control.

30 3. A user interface according to Claim 1, wherein said at least one property page having an interface for device-dependent image acquisition device control is dynamically loaded.

35 4. A user interface according to Claim 1, further comprising a tool bar and a status bar.

5. A user interface according to Claim 1, wherein the user interface is executed in a windowing environment.

5 6. A method for providing a user interface for an image acquisition device, comprising the steps of:

displaying a preview area for a preview image;

10 displaying a control area for a property sheet, said property sheet comprising a plurality of property pages, each of the plurality of property pages having an interface for image acquisition device control, at least one property page having an interface for core image acquisition device control and at least one property page having an interface for device-dependent image acquisition device control;

20 accepting manipulation of the image acquisition device control; and

reflecting the manipulation of the image acquisition device control in the preview image.

25 7. A method for providing a user interface for an image acquisition device according to Claim 6, wherein said plurality of property pages includes a main property page, a tone property page, and a preferences property page; and wherein the main property page, the tone property page, and the preferences property page each provides at least one interface for core image acquisition device control.

30 8. A method for providing a user interface for an image acquisition device according to Claim 6, further comprising the step of dynamically loading said at least one property page

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having an interface for device-dependent image acquisition device control.

5 9. A method for providing a user interface for an image acquisition device according to Claim 6, further comprising the steps of displaying a tool bar and displaying a status bar.

10 10. A method for providing a user interface for an image acquisition device according to Claim 6, wherein the user interface is executed in a windowing environment.

15 11. An apparatus for controlling an image acquisition device, comprising:  
a memory for storing executable process steps including executable process steps for a user interface for the image acquisition device;  
input means for inputting data;  
20 output means for outputting data; and  
a processor for executing the process steps stored in said memory so as (1) to display a preview area for a preview image; (2) to display a control area for a property sheet, said property sheet  
25 comprising a plurality of property pages, each of the plurality of property pages having an interface for image acquisition device control, at least one property page having an interface for core image acquisition device control and at least one property  
30 page having an interface for device-dependent image acquisition device control; (3) to accept manipulation of the image acquisition device control; and (4) to reflect the manipulation of the image acquisition device control in the preview  
35 image.

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12. An apparatus for controlling an image acquisition device according to Claim 11, wherein said plurality of property pages includes a main property page, a tone property page, and a preferences property page; and wherein the main property page, the tone property page, and the preferences property page each provides at least one interface for core image acquisition device control.

13. An apparatus for controlling an image acquisition device according to Claim 11, wherein said processor executes additional process steps stored in said memory, before accepting manipulation of the image acquisition device control, so as to dynamically load said at least one property page having an interface for device-dependent image acquisition device control.

14. An apparatus for controlling an image acquisition device according to Claim 11, wherein said processor executes additional process steps stored in said memory so as (1) to display a tool bar and (2) to display a status bar.

15. An apparatus for controlling an image acquisition device according to Claim 11, wherein said processor executes the process steps in a windowing environment.

16. Computer-executable process steps stored on a computer-readable medium, the process steps for use on a computer system to provide a user interface for an image acquisition device, the process steps comprising:

code to display a preview area for a preview image;

code to display a control area for a property sheet, said property sheet comprising a plurality of property pages, each of the plurality of property pages having an interface for image acquisition device control, at least one property page having an interface for core image acquisition device control and at least one property page having an interface for device-dependent image acquisition device control;

code to accept manipulation of the image acquisition device control; and

code to reflect the manipulation of the image acquisition device control in the preview image.

17. Computer-executable process steps according to Claim 16, wherein said plurality of property pages includes a main property page, a tone property page, and a preferences property page; and wherein the main property page, the tone property page, and the preferences property page each provides at least one interface for core image acquisition device control.

18. Computer-executable process steps according to Claim 16, further comprising code to dynamically load said at least one property page having an interface for device-dependent image acquisition device control.

19. Computer-executable process steps according to Claim 16, further comprising code to display a tool bar and code to display a status bar.

20. Computer-executable process steps according to Claim 16, wherein the computer-

executable process steps are executed in a windowing environment.

21. A computer-readable medium which stores computer-executable process steps for use on a computer system to provide a user interface for an image acquisition device, the process steps comprising:

a first displaying step to display a preview area for a preview image;

a second displaying step to display a control area for a property sheet, said property sheet comprising a plurality of property pages, each of the plurality of property pages having an interface for image acquisition device control, at least one property page having an interface for core image acquisition device control and at least one property page having an interface for device-dependent image acquisition device control;

an accepting step to accept manipulation of the image acquisition device control; and

a reflecting step to reflect the manipulation of the image acquisition device control in the preview image.

22. A computer-readable medium according to Claim 21, wherein said plurality of property pages includes a main property page, a tone property page, and a preferences property page; and wherein the main property page, the tone property page, and the preferences property page each provides at least one interface for core image acquisition device control.

23. A computer-readable medium according to Claim 21, wherein the process steps further comprise a loading step of dynamically loading said

at least one property page having an interface for device-dependent image acquisition device control.

5 24. A computer-readable medium according to Claim 21, wherein the process steps further comprise:

a third displaying step to display a tool bar, and

10 a fourth displaying step to display a status bar.

25. A computer-readable medium according to Claim 21, wherein the process steps are computer-executable in a windowing environment.

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26. A user interface comprising:

a property sheet with a plurality of property pages, each property page having a tab describing control provided by the property page;

20 wherein at least one property page includes a control region for providing control and a button region having multiple buttons; and

25 wherein an appearance of said control region is changed in response to user manipulation of the multiple buttons, with different appearances providing different interfaces for the control.

30 27. A user interface according to Claim 26, wherein the user interface controls an image acquisition device.

35 28. A user interface according to Claim 27, wherein the at least one property page that includes a control region and a button region is a tone property page.

29. A user interface according to Claim 28, wherein the appearance of the control region is changed in response to user manipulation of the multiple buttons so as to provide an automatic tone control interface, a contrast/brightness tone control interface, a gamma tone control interface, a histogram tone control interface, or an editable curve tone control interface.

30. A user interface according to Claim 26, wherein the multiple buttons in the button region of the property page are arranged according to a familiarity to users of varying levels of expertise of the different interfaces resulting from user manipulation of the multiple buttons.

31. A user interface according to Claim 26, wherein the multiple buttons in the button region of the property page are arranged according to a complexity of different interfaces resulting from user manipulation of the multiple buttons.

32. A user interface according to Claim 26, wherein the multiple buttons in the button region of the property page are radio-style buttons.

33. A user interface according to Claim 26, wherein the user interface is executed in a windowing environment.

34. A method for providing a user interface comprising the steps of:  
displaying a property sheet with a plurality of property pages, each property page having a tab describing control provided by the property page, at least one property page including



a control region for providing the control and a button region having multiple buttons; and

changing an appearance of said control region in response to user manipulation of the multiple buttons, with different appearances providing different interfaces for the control.

35. A method for providing a user interface according to Claim 34, wherein the user interface controls an image acquisition device.

36. A method for providing a user interface according to Claim 35, wherein the at least one property page that includes a control region and a button region is a tone property page.

37. A method for providing a user interface according to Claim 36, wherein the appearance of the control region is changed in response to user manipulation of the multiple buttons so as to provide an automatic tone control interface, a contrast/brightness tone control interface, a gamma tone control interface, a histogram tone control interface, or an editable curve tone control interface.

38. A method for providing a user interface according to Claim 34, wherein the multiple buttons in the button region of the property page are arranged according to a familiarity to users of varying levels of expertise of the different interfaces resulting from user manipulation of the multiple buttons.

39. A method for providing a user interface according to Claim 34, wherein the multiple buttons in the button region of the

property page are arranged according to a complexity of different interfaces resulting from user manipulation of the multiple buttons.

5           40. A method for providing a user interface according to Claim 34, wherein the multiple buttons in the button region of the property page are radio-style buttons.

10           41. A method for providing a user interface according to Claim 34, wherein the user interface is executed in a windowing environment.

15           42. An apparatus for providing a user interface, comprising:  
            a memory for storing executable process steps including executable process steps for a user interface;  
            input means for inputting data;  
20           output means for outputting data; and  
            a processor for executing the process steps stored in said memory so as (1) to display a property sheet with a plurality of property pages, each property page having a tab describing control provided by the property page, at least one property  
25           page including a control region for providing the control and a button region having multiple buttons; and (2) to change an appearance of said control region in response to user manipulation of the multiple buttons, with different appearances  
30           providing different interfaces for the control.

35           43. An apparatus for providing a user interface according to Claim 42, wherein the user interface controls an image acquisition device.

44. An apparatus for providing a user interface according to Claim 43, wherein the at least one property page that includes a control region and a button region is a tone property page.

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45. An apparatus for providing a user interface according to Claim 44, wherein the processor changes the appearance of the control region in response to user manipulation of the multiple buttons so as to provide an automatic tone control interface, a contrast/brightness tone control interface, a gamma tone control interface, a histogram tone control interface, or an editable curve tone control interface.

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46. An apparatus for providing a user interface according to Claim 42, wherein the multiple buttons in the button region of the property page are arranged according to a familiarity to users of varying levels of expertise of the different interfaces resulting from user manipulation of the multiple buttons.

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47. An apparatus for providing a user interface according to Claim 42, wherein the multiple buttons in the button region of the property page are arranged according to a complexity of different interfaces resulting from user manipulation of the multiple buttons.

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48. An apparatus for providing a user interface according to Claim 42, wherein the multiple buttons in the button region of the property page are radio-style buttons.

49. An apparatus for controlling an image acquisition device according to Claim 42, wherein

said processor executes the process steps in a windowing environment.

5           50. Computer-executable process steps stored on a computer-readable medium, the process steps for use on a computer system to provide a user interface, the process steps comprising:

10           code to display a property sheet with a plurality of property pages, each property page having a tab describing control provided by the property page, at least one property page including a control region for providing the control and a button region having multiple buttons; and

15           code to change an appearance of said control region in response to user manipulation of the multiple buttons, with different appearances providing different interfaces for the control.

20           51. Computer-executable process steps according to Claim 50, wherein the user interface controls an image acquisition device.

25           52. Computer-executable process steps according to Claim 51, wherein the at least one property page that includes a control region and a button region is a tone property page.

30           53. Computer-executable process steps according to Claim 52, wherein the code to change the appearance of the control region changes the appearance so as to provide an automatic tone control interface, a contrast/brightness tone control interface, a gamma tone control interface, a histogram tone control interface, or an editable  
35           curve tone control interface.

54. Computer-executable process steps according to Claim 50, wherein the multiple buttons in the button region of the property page are arranged according to a familiarity to users of varying levels of expertise of the different interfaces resulting from user manipulation of the multiple buttons.

55. Computer-executable process steps according to Claim 50, wherein the multiple buttons in the button region of the property page are arranged according to a complexity of different interfaces resulting from user manipulation of the multiple buttons.

56. Computer-executable process steps according to Claim 50, wherein the multiple buttons in the button region of the property page are radio-style buttons.

57. Computer-executable process steps according to Claim 50, wherein the computer-executable process steps are executed in a windowing environment.

58. A computer-readable medium which stores computer-executable process steps for use on a computer system to provide a user interface, the process steps comprising:

a displaying step to display a property sheet with a plurality of property pages, each property page having a tab describing control provided by the property page, at least one property page including a control region for providing the control and a button region having multiple buttons; and

a changing step to change an appearance of said control region in response to user manipulation of the multiple buttons, with different appearances providing different interfaces for the control.

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59. A computer-readable medium according to Claim 58, wherein the user interface controls an image acquisition device.

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60. A computer-readable medium according to Claim 59, wherein the at least one property page that includes a control region and a button region is a tone property page.

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61. A computer-readable medium according to Claim 60, wherein the changing step changes the appearance of the control region so as to provide an automatic tone control interface, a contrast/brightness tone control interface, a gamma tone control interface, a histogram tone control interface, or an editable curve tone control interface.

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62. A computer-readable medium according to Claim 58, wherein the multiple buttons in the button region of the property page are arranged according to a familiarity to users of varying levels of expertise of the different interfaces resulting from user manipulation of the multiple buttons.

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63. A computer-readable medium according to Claim 58, wherein the multiple buttons in the button region of the property page are arranged according to a complexity of different interfaces resulting from user manipulation of the multiple buttons.

64. A computer-readable medium according to Claim 58, wherein the multiple buttons in the button region of the property page are radio-style buttons.

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65. A computer-readable medium according to Claim 58, wherein the process steps are computer-executable in a windowing environment.

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66. A method for utilizing a user interface, comprising the steps of:

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starting the user interface, wherein the user interface includes a property sheet with a plurality of property pages, each property page having a tab describing control provided by the property page;

selecting one of the plurality of property pages;

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determining if multiple buttons are available, the multiple buttons corresponding to plural interfaces for the control;

selecting one of the multiple buttons corresponding to a desired interface; and using the desired interface.

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67. A method for utilizing a user interface according to Claim 66, wherein the user interface controls an image acquisition device.

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68. A method for utilizing a user interface according to Claim 67, wherein one of the plurality of property pages is a tone property page.

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69. A method for utilizing a user interface according to Claim 68, wherein the plural interfaces for the control include an automatic tone control interface, a contrast/brightness tone

control interface, a gamma tone control interface, a histogram tone control interface, or an editable curve tone control interface.

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70. A method for utilizing a user interface according to Claim 66, wherein the multiple buttons are arranged according to a familiarity to users of varying levels of expertise of the different interfaces resulting from user manipulation of the multiple buttons.

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71. A method for utilizing a user interface according to Claim 66, wherein the multiple buttons are arranged according to a complexity of plural interfaces to which each button corresponds.

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72. A method for utilizing a user interface according to Claim 66, wherein the multiple buttons are radio-style buttons.

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73. A method for utilizing a user interface according to Claim 66, wherein the user interface is executed in a windowing environment.

Sub A

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74. A user interface comprising:  
a property page, the property page containing plural elements;  
a first interface comprising at least one of the plural elements; and  
a second interface comprising at least one of the plural elements;

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wherein the first interface is provided by showing the at least one of the plural elements comprising the first interface and by hiding all other of the plural elements, and



wherein the second interface is provided by showing the at least one of the plural elements comprising the second interface and by hiding all other of the plural elements.

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75. A user interface according to Claim 74, wherein said property page has a control region, and wherein when said plural elements are shown, said plural elements are shown in said control region.

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76. A user interface according to Claim 74, wherein said property page has a button region, said button region having multiple buttons, and wherein the second interface is provided in response to user manipulation of the multiple buttons.

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77. A user interface according to Claim 74, wherein said first interface and said second interface have at least one common element, said common element shown both when the first interface is provided and when the second interface is provided.

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78. A user interface according to Claim 74, wherein said plural elements include at least one element selected from the group of list boxes, text boxes, check boxes, slides, buttons, and editable curves.

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79. A user interface according to Claim 74, wherein said property page provides tone control for an image acquisition device.

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80. A user interface according to Claim 74, wherein the user interface is executed in a windowing environment.

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Sub A2

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81. A method for providing a user interface comprising the steps of:

displaying a property page containing plural elements, each of the plural elements being either shown or hidden;

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providing a first interface, said first interface comprising at least one of the plural elements, by showing the at least one of the plural elements comprising the first interface and by hiding all other of the plural elements; and

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providing a second interface, said second interface comprising at least one of the plural elements, by showing the at least one of the plural elements comprising the second interface and by hiding all other of the plural elements.

Sub C5

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82. A method for providing a user interface according to Claim 81, wherein said property page has a control region, and wherein when said plural elements are shown, said plural elements are shown in said control region.

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83. A method for providing a user interface according to Claim 81, wherein said property page has a button region, said button region having multiple buttons, and wherein the second interface is provided in response to user manipulation of the multiple buttons.

Sub C6

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84. A method for providing a user interface according to Claim 81, wherein said first interface and said second interface have at least one common element, said common element shown both when the first interface is provided and when the second interface is provided.

85. A method for providing a user interface according to Claim 81, wherein said plural elements include at least one element selected from the group of list boxes, text boxes, check boxes, slides, buttons, and editable curves.

86. A method for providing a user interface according to Claim 81 wherein said property page provides tone control for an image acquisition device.

87. A method for providing a user interface according to Claim 81, wherein the user interface is executed in a windowing environment.

Sub A  
88. An apparatus for providing a user interface, comprising:  
a memory for storing executable process steps including executable process steps for a user interface;  
input means for inputting data;  
output means for outputting data; and  
a processor for executing the process steps stored in said memory so as (1) to display a property page containing plural elements, each of the plural elements being either shown or hidden;  
(2) to provide a first interface, said first interface comprising at least one of the plural elements, by showing the at least one of the plural elements comprising the first interface and by hiding all other of the plural elements; and (3) to provide a second interface, said second interface comprising at least one of the plural elements, by showing the at least one of the plural elements comprising the second interface and by hiding all other of the plural elements.

Sub C 7  
5 89. An apparatus for providing a user interface according to Claim 88, wherein said property page has a control region, and wherein when said plural elements are shown, said plural elements are shown in said control region.

10 90. An apparatus for providing a user interface according to Claim 88, wherein said property page has a button region, said button region having multiple buttons, and wherein the second interface is provided in response to user manipulation of the multiple buttons.

15 Sub C 20 91. An apparatus for providing a user interface according to Claim 88, wherein said first interface and said second interface have at least one common element, said common element shown both when the first interface is provided and when the second interface is provided.

25 92. An apparatus for providing a user interface according to Claim 88, wherein said plural elements include at least one element selected from the group of list boxes, text boxes, check boxes, slides, buttons, and editable curves.

30 93. An apparatus for providing a user interface according to Claim 88, wherein said property page provides tone control for an image acquisition device.

35 94. An apparatus for providing a user interface according to Claim 88, wherein the user interface is executed in a windowing environment.

Sub A 95. Computer-executable process steps stored on a computer-readable medium, the process

steps for use on a computer system to provide a user interface, the process steps comprising:

code to display a property page containing plural elements, each of the plural elements being either shown or hidden;

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code to provide a first interface, said first interface comprising at least one of the plural elements, by showing the at least one of the plural elements comprising the first interface and by hiding all other of the plural elements; and

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code to provide a second interface, said second interface comprising at least one of the plural elements, by showing the at least one of the plural elements comprising the second interface and by hiding all other of the plural elements.

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96. Computer-executable process steps according to Claim 95, wherein said property page has a control region, and wherein when said plural elements are shown, said plural elements are shown in said control region.

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97. Computer-executable process steps according to Claim 95, wherein said property page has a button region, said button region having multiple buttons, and wherein the second interface is provided in response to user manipulation of the multiple buttons.

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98. Computer-executable process steps according to Claim 95, wherein said first interface and said second interface have at least one common element, said common element shown both when the first interface is provided and when the second interface is provided.

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5 103. A computer-readable medium according to Claim 102, wherein said property page has a control region, and wherein when said plural elements are shown, said plural elements are shown in said control region.

10 104. A computer-readable medium according to Claim 102, wherein said property page has a button region, said button region having multiple buttons, and wherein the second interface is provided in response to user manipulation of the multiple buttons.

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15 105. A computer-readable medium according to Claim 102, wherein said first interface and said second interface have at least one common element, said common element shown both when the first interface is provided and when the second interface is provided.

20 106. A computer-readable medium according to Claim 102, wherein said plural elements include at least one element selected from the group of list boxes, text boxes, check boxes, slides, buttons, and  
25 editable curves.

30 107. A computer-readable medium according to Claim 102, wherein said property page provides tone control for an image acquisition device.

108. A computer-readable medium according to Claim 102, wherein the process steps are computer-executable in a windowing environment.